

## II. REMARKS

### Preliminary Remarks

Upon entry of this amendment, claims 39-43, 59-85, and 89-98 will be pending, of which claims 39 and 82 are independent.

Claim 1-38 were canceled by preliminary amendment, filed on June 1, 2001 and claims 39-97 were added. There was, however, a typographical error which resulted in the introduction of two claims numbered "90". For the sake of clarity, and in accordance with U.S. patent practice, the claims are renumbered as shown in the following table:

Numbering of claims according to the preliminary amendment	Current numbering of claims (after re-numbering)
First Claim 90	Claim 90
Second Claim 90	Claim 91
Claim 91	Claim 92
Claim 92	Claim 93
Claim 93	Claim 94
Claim 94	Claim 95
Claim 95	Claim 96
Claim 96	Claim 97
Claim 97	Claim 98

Claims 44-58 and 86-88 were withdrawn as being directed to a non-elected invention. Claims 39, 42, 62, 63, 66, 71, 78, 80, 82, 84, 90, 91, 92, 94, 95, 97, and 98 are amended. Support for the amendment to the claims can be found in the specification and claims as filed (see, for example, page 7, line 14; page 9, lines 21-24; and page 10, lines 2-19). Therefore the applicants believe that no new matter has been added as result of these amendments.

The applicants respectfully request reconsideration and allowance of the present application. This response is timely filed within the statutory period for response with the fee for a two-month extension of time.

### Patentability Remarks

#### *Rejection under 35 U.S.C. §112, first paragraph –*

Claims 39-43, 59-85, and 89-98 were rejected under 35 U.S.C. §112, first paragraph, for allegedly not being enabled for the precursor of the functionalized organic polymer or functionalized silicone polymer. This rejection is moot in view of the amendments to the claims.

As amended, the precursor of the functionalized organic polymer or the precursor of the functionalized silicone polymer is removed from claims 39-43, 59-85, and 89-98. Therefore, the applicants respectfully request removal of this rejection.

Claims 39-43, 59-62, 65-85, 89, 90, and 93-98 were rejected under 35 U.S.C. §112, first paragraph, for allegedly not providing enablement for the derivatives of various UV-A sunscreen agents. This rejection is moot in view of the amendments to the claims.

As amended, claims 39-43, 59-62, 65-85, 89, 90, and 93-98 are amended to remove the term “derivatives”. Therefore, the applicants respectfully request removal of this rejection.

#### *Rejection under 35 U.S.C. §112, second paragraph –*

Claims 39-43, 59-85, and 89-98 were rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for the following reasons. The applicants respectfully traverse.

- The term “at least partial hydrolysis” in claim 39. Claim 39 is directed to, *inter alia*, zirconium, titanium, and aluminum alkoxides. Hydrolysis of alkoxide groups on a molecule results in the formation of hydroxides. It is clear to one of ordinary skill in the art that “complete” hydrolysis of an alkoxide is the conversion of all the alkoxide groups into hydroxides. Therefore, “partial” hydrolysis of an alkoxide is the conversion of some, but not all, of the alkoxide groups into hydroxides. It is very well known that Zr, Ti, and Al have valencies of 4, 4, and 3 respectively. Consequently, the partial hydrolysis of a zirconium or a titanium alkoxide is the conversion of less than four of the alkoxide groups into hydroxides, while the partial hydrolysis of an aluminum alkoxide is the conversion of less than three of the alkoxide groups into hydroxides. Attached herewith is Encyclopedia of Chemical Technology (Fourth Edition, Volume 2: Alkanolamines to Antibiotics (Glycopeptides), John Wiley & Sons, 1992, pp. 35-52), which describes the reactions

involved in “partial hydrolysis” of alkoxides. In other words, this term is well known to one of ordinary skill in the art and is not indefinite;

- The term “the metal oxide and its condensation” in claim 39. Just as hydrolysis of alkoxides is well known, so is the condensation of alkoxides. Alkoxides react with each other, and with alcohols, to produce ethers. These reactions are called “condensation reactions” and a by-product of such reactions is water or alcohol. Attached herewith is Encyclopedia of Chemical Technology (Fourth Edition, Volume 2: Alkanolamines to Antibiotics (Glycopeptides), John Wiley & Sons, 1992, pp. 35-52), which describes the reactions involved in “condensation” of alkoxides. Therefore, this term is also well known to one of ordinary skill in the art and is not indefinite;
- The term “modified natural polymers” in claims 67 and 93. This term is very well known to one of ordinary skill in the art. Attached herewith is a list of U.S. patents that contain this term. Therefore, claims containing this term are not indefinite;
- The term “sol”. Sol is also a term very well known to one of ordinary skill in the art. Attached herewith is a definition of sol from Attached herewith is Encyclopedia of Chemical Technology (Fourth Edition, Volume 22: Silicon Compounds to Succinic Acid and Succinic Anhydride, John Wiley & Sons, 1992, pp. 497-528), which provides a definition of “sol”.

The applicants respectfully submit that claims 39-43, 59-85, and 89-98 are not indefinite under 35 U.S.C. §112, second paragraph, and request removal of this rejection.

*Rejection under 35 U.S.C. §103 –*

Claims 39-43, 59-85, and 89-98 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Mondet *et al.* (WO 98/33906, U.S. Pat. No. 6,352,699) in view of Yue *et al.* (U.S. Pat. No. 5,700,451). The applicants respectfully traverse.

There is no teaching or suggestion in Mondet *et al.* to prepare a material using at least one organic UV-A sunscreen agent having a maximum absorption wavelength ( $\lambda_{\max}$ ) of less than 370 nm, wherein the material has a  $\lambda_{\max}$  of 370 nm to 400 nm. In other the  $\lambda_{\max}$  of the material is shifted from a value less than 370 nm to a value from 370 nm to 400 nm.


Yue *et al.* does not overcome the deficiencies of Mondet *et al.* Not only do Yue *et al.* not teach or suggest one of ordinary skill in the art to prepare a material using a UV-A sunscreen agent with a  $\lambda_{\max}$  less than 370 nm resulting in a material with a  $\lambda_{\max}$  of 370 nm to

Inventor(s): CHODOROWSKI *et al.*  
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400 nm, but all examples in Yue *et al.* use inorganic TiO<sub>2</sub>. Therefore, the combination of Mondet *et al.* with Yue *et al.* does not teach all the claim limitations. Furthermore, Yue *et al.* provide no motivation to one of ordinary skill in the art to replace inorganic TiO<sub>2</sub> with organic sunscreen agents that shift the  $\lambda_{\text{max}}$  since the compositions of Yue *et al.* provide UV-protection over a wide range of wavelengths.

In view of the foregoing, the claims are now believed to be in form for allowance, and such action is hereby solicited. If any point remains in issue which the examiner feels may be best resolved through a personal or telephone interview, the examiner is kindly requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,  
PILLSBURY WINTHROP LLP

By:   
Thomas A. Cawley, Jr., Ph.D.  
Registration No.: 40,944  
Direct Telephone No.: 703-905-2144

TAC\GP

P.O. Box 10500  
McLean, VA 22102

General Telephone No.: 703-905-2000  
General Facsimile No.: 703-905-2500